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Countries in Sub-Saharan Africa (SSA) are trying to make their proposed goal of universal primary education a reality. Given the budgetary constraints it is natural to seek to increase efficiency and to reduce the cost of inputs. Teachers' salaries account for over 90 percent of the primary school recurrent budget. Therefore, the analysis of teachers' salaries is crucial to forecasting primary school expenditures and developing policies to rationalize teachers' cost. Until now a comparative study of teachers' salaries for SSA did not exist. The present study remedies this situation. The study analyzes factors affecting teachers' salaries in general, and describes categories of teachers, salary structures, and pay supplements in SSA countries. With the use of a computer forecasting model this study provides forecasts of teacher cost for the next 2 decades for 20 SSA countries under varying hypotheses, and suggests steps to facilitate planning of teacher salaries in SSA. (Author)

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World Bank Discussion Papers

Primary School Teachers' Salaries in Sub-Saharan Africa

Manuel Zymelman
with
Joseph DeStefano

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Manuel Zymelman
with
Joseph DeStefano

The World Bank
Washington, D.C.

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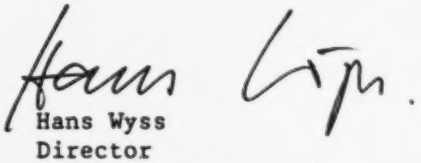
FOREWORD

The 1987 World Bank Policy Study "Education in Sub-Saharan Africa" identified the training of teachers as a major factor in determining the quality of education in primary schooling, and the salaries of teachers as a major topic of inquiry in the quest for reducing unit costs.

The Study of Primary School Teacher Salaries in SSA develops further the discussion of these issues by presenting for the first time a comparative analysis of hitherto unavailable data on the training requirements, working conditions and salary structures of primary school teachers in SSA. This comparative analysis is supplemented with a general model for forecasting teacher salaries.

This work is useful for decision makers in Sub-Saharan African governments, particularly planners in Ministries of Education, Planning and Finance, as well as policy analysts in academic and other institutions. It provides a statistical basis for exploring relationship of salaries to income per capita, trends in real salaries in the 1980s, and expected average salaries of teachers for the next two decades. More important, the study points to the crucial roles of the structure of salary scales, present distribution of the teaching force over the scale, and rate of growth of the education in determining future costs.

We hope that the insights gained from this study and the suggested steps to facilitate the analysis of teacher salaries in SSA will increase the effectiveness of educational planning and help governments develop their own country specific solutions for dealing with the problem of reducing teacher average cost while maintaining educational quality.



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ABSTRACT

Countries in Sub-Saharan Africa (SSA) are trying to make their proposed goal of universal primary education a reality. Given the budgetary constraints it is natural to seek to increase efficiency and to reduce the cost of inputs. Teachers' salaries account for over ninety percent of the primary school recurrent budget. Therefore, the analysis of teachers' salaries is crucial to forecasting primary school expenditures and developing policies to rationalize teachers' cost. Until now a comparative study of teachers' salaries for SSA did not exist. The present study remedies this situation. The study analyzes factors affecting teachers' salaries in general, and describes categories of teachers, salary structures, and pay supplements in SSA countries. With the use of a computer forecasting model this study provides forecasts of teacher cost for the next two decades for 20 SSA countries under varying hypotheses, and suggests steps to facilitate planning of teacher salaries in SSA.

TABLE OF CONTENT

		Page Nos.
I.	Introduction	1
II.	Factors Affecting Teachers' Salaries	2
	Economic Factors	2
	Government Policy	3
	Individual Criteria	4
	Salary Scales	7
III.	Supplements to Teacher Salaries	15
	Supplements Related to Work	15
	Supplements Related to Welfare	16
IV.	Teachers' Salaries in Sub-Saharan Africa	19
	Categories of Teachers	19
	Comparison of Salary Structure	27
	Supplements to Teachers' Pay	29
	The Relative Value of Primary Teachers' Salaries	32
V.	The Impact of Salary Scales in SSA in Future Costs of Primary Education	38
VI.	Recommendations	46
Appendix		50

I. Introduction

Primary education in SSA is facing an uncertain future. After a remarkable progress since independence, where enrollments increased almost five-fold and enrolment rates almost doubled - the rate of increase of enrollments can barely keep up with the growth rate of the primary school age population. As for the future, just to keep the same enrollment rates the effort would have to be gargantuan. By the turn of the century almost 40 million new student places would have to be created; another million teachers would have to be employed; recurrent expenditures would have to double. And all this, while going through a painful economic adjustment process which is required for modernization and development.

Given the stricture of future educational budgets, there is no alternative but to increase resources to basic education by redistributing increases of the education budget, and by introducing measures to increase efficiency to lower unit costs. Unit costs depend not only on the utilization of inputs but also on their price. In primary schooling the most important input is the teacher (salaries of teachers account for between 90 and 95 percent of the recurrent budget in African countries). It is incumbent, therefore, to study, understand, and analyze teachers salaries in SSA, to be able to forecast primary school expenditures and develop realistic policies to minimize teachers' cost.

II. Factors Affecting Teacher's Salaries

Economic Factors

These are likely to be the same affecting salaries in general. Theoretically, in free societies, wages of salaries have an allocative function: salaries are offered for the services of persons as an inducement to take up or to stay in a certain occupation, while salary differentials among occupations are incentives to induce manpower shifts. Although earnings are not the only variable, if other factors are kept constant, occupations offering higher salaries will attract more and/or better qualified candidates than occupations offering lower salaries. The two most obvious economic factors affecting salaries in general are the level of national productivity and changes in the cost of living.

In general

$$W_t = W_o (1+m)^t (1+n)^t$$

where:

W = salary
t = number of years
m = rate of increase of prices
n = rate of growth of productivity

This formulation explains why education necessarily becomes more expensive even for providing education of a constant quality and in the absence of price inflation. If teachers salaries are held constant while other wage earners increase their earnings because of increased productivity the quality of teaching would deteriorate, since in the long run the best teachers or candidates for the teaching profession would shift to other occupations. If teaching is to claim well-qualified

teachers, the profession will have to be made as attractive as other comparable professional or semi-professional occupations.

While factors affecting teachers' salaries are largely economic in nature, there are also some social and political factors exerting strong pressures. For example, the fact that teachers are also public employees means that other government objectives may conflict with the allocation of resources to education; in some cases where teachers form the bulk of public and urban employment, they can exert considerable political pressure; in other instances, the legal prohibition to strike may mitigate against salary raises. Social and cultural traits that confer higher social status to teachers may make teaching at lower salaries more attractive, demographic pressures and attempts to lower student/teacher ratios may intensify teacher shortage and spur higher salaries.

Government Policy.

Theoretically, salary scales (schedules) for the teaching profession should be used to ensure that an individual teacher's remuneration is commensurate with his/her level of qualification and professional responsibility and to guarantee the individual a reasonable career prospect. Teachers in SSA are mostly government employees. Salary scales for teachers are either part of the overall pay scheme for public functionaries or specific to the teaching profession. In the former case teachers are assigned a grade within the normal government employee ranks and paid a salary equivalent to their equally qualified civil servant counterpart. Where teachers pay scales exist apart from other government

employees, their salaries can be established and updated separately. However, in practice, adjustments to teacher salary scales are based on, and often made at the same time as, adjustments to all civil servant salaries.

In SSA the decision to regulate teacher salaries is most often made unilaterally by the government without consultation of or participation by representatives of teachers. In many SSA countries teacher unions exist. However, collective bargaining is rarely used as a means of setting teachers salaries. It is more likely that unions exert political pressure on the government with the expectation of influencing its decisions.

Individual Criteria

A teaching pay structure is a pre-determined succession of salary levels corresponding to different categories within the teaching profession. The placement of each individual in the appropriate category and step of the corresponding salary scale (schedule) depends on the characteristics of that teacher as compared to pre-determined criteria. The criteria used throughout Sub-Sahara Africa include the following: the level of qualification of the candidate, the degree of responsibility associated with his assignment, and the amount of experience. In some countries, professional performance also plays a role in determining a teachers's subsequent advancement within the salary scale.

Level of Qualification The primary determinant of the category to which a teacher is assigned (and therefore his/her salary and career

prospects) is the level of academic qualification. Included within the individual's qualifications are the years of general and specialized education as well as any professional training received. Categories exist in most countries for teachers who have completed primary, junior secondary, or senior secondary levels of education. Distinctions are also made between teachers having received no specialized pedagogical training and those who have received varying degrees of training (as part of their secondary education or in addition to it). Also, the majority of countries differentiate between certified and uncertified teachers. This division is usually based on completion of specialized training and success in a state examination.

Interestingly, though minimum standards exist for primary teacher qualifications (in most countries at least a junior secondary certificate in pedagogy), because of shortages of qualified personnel in some countries, categories for non-qualified teachers have been added to the salary scales.

Salaries and career opportunities within the different categories are directly related to the level of qualification. A teacher entering the profession is placed in a salary scale (category) matching his/her qualifications and will remain in that scale category for the entire career. However, it is possible to pass from one scale to another by obtaining the qualification required to enter the higher category.

Responsibility. The other factor determining the salary scale grade on which a teacher is placed is the degree of responsibility assumed

in the post. This includes different levels of responsibility as a teacher (e.g. teaching different subject areas or being named a head teacher), acquiring responsibilities in addition to teaching (e.g. supervisory or administrative in nature), or moving from a teaching role to an administrative position. Often different scales exist that correspond to different degrees of responsibility associated with a variety of teaching or administrative assignments. In general, salaries in those scales directly reflect the nature of the responsibility assumed by a teacher in the corresponding position. For example, administrative posts are higher paid than teaching posts.

Experience While qualifications and responsibility determine the salary scale into which a teacher is placed, it is primarily years of experience in the field that permit the teacher to advance within that scale during the course of his/her career. Assuming that experience in the profession improves the quality of a teacher, (see page 13) some incremental advance is afforded all teachers for their years of service. Even systems in which advancement is based on merit (see below) a minimum increment is guaranteed to teachers receiving a satisfactory evaluation.

The amount of time required to remain at a given step within the salary scale before advancing to the next, and the size of the salary increments vary from country to country. Automatic promotion from one step to the next is common.

Performance The other criterion determining the level a teacher attains within a given salary scale grade is his/her professional

performance. In all countries teachers are evaluated at least on an annual basis. In countries where advancement on the salary scale is based on merit, this evaluation determines salary for the next year. Minimum standards of performance exist across Sub-Saharan Africa, and provisions are also made for penalizing teachers evaluated below those standards. This usually involves denial of a salary increment.

In summary, the government establishes and regulates the structure of teacher salary scales in relation to other public employees (either directly or indirectly). The individual factors discussed above allow as much as possible an objective placement of teachers on the corresponding salary scale.

Salary Scales

A salary schedule is a statement of policy on remuneration by which the salary of any teacher is determined in accordance with his/her qualifications. The qualifications usually used are: professional and academic preparation and experience. Other qualifications could be sex, marital status, number of dependents, grade level taught, etc. The most widely used teacher salary schedule is the unified or single salary schedule.

The Unified Salary Schedule. It is generally held that pay should be determined by the value of work performed. However, in education, it is difficult to determine the "output" and to specify the contribution to the "output" of an individual teacher. Training and experience, both easily determined, are used, therefore, as proxies.

The typical unified salary schedule is two-dimensional: training level and experience (see Table 1).

TABLE 1

Experience	Training Levels	1	2		n
Steps	Years				
1	0	S_{11}	S_{21}	----	S_{n1}
2	1	S_{12}	S_{22}	----	S_{n2}
3	2	.	.		
.	.	.	.		
.	.	.	.		
.	.	.	.		
M	(M-1)	S_{1m}	S_{2m}	----	S_{nm}

S_{11} is the port of entry salary of a teacher with a degree of level one.

S_{m1} is the maximum salary of a teacher with a level one degree.

S_{mn} is the maximum salary of a teacher with a level n degree.

The cost for each level of training is

$$\sum_{i=1}^{m} S_{ij} \times N_{ij}$$

Where N = number of teacher of type j in step i

The cost for all the staff is

$$\sum_{i=1}^{m} \sum_{j=1}^{m} S_{ij} \times N_{ij}$$

An "index" schedule is a salary schedule in which the minimum and maximum salary and the annual steps as well as the relationships between levels of training, are stated in terms of ratios to the basic salary rather than in monetary amounts (Table 2).

TABLE 2

Experience	Training Levels	1	2	----	n
Steps	Years				
1	0	1	1.2	----	1.6
2	1	1.1	1.3	----	1.8
3	2	1.2	1.5	----	2.0
4	3	.	.	----	.
.	.	.	.	----	.
.	.	.	.	----	.
M	(M-1)	2.0	2.4	----	3.0

The relationships between training levels, between minimum and maximum levels, and between increments among the steps are all policy variables that can be used to attract and retain qualified teachers, to encourage professional growth and, within constraints, to minimize costs. In theory,1/ the starting salary of a teacher with minimum degree qualifications (S_{11}) should be that of an individual with similar level of qualification that had entered some other area of employment where

---

1/ The entry salary could be different if the time profile of earnings is also different. In this case, only the present value should be equal.

$$P.V. = \sum_{t=1}^{n} S_t/(1+r)^t = \sum_{t=1}^{n} S_{ot}/(1+r)^t$$

P.V. = present value
S = salary of teacher at time t
S = salary of other occupation at time t
r = interest rate

economic advancement is similar to that of a teacher, (disregarding, of course, non-pecuniary benefits of both jobs).

Similarly, the differential of salaries between levels of training can be calculated by assuming the extra cost of attaining a higher level of training, including the opportunity cost of working and advancing in the scale ladder. 1/

The determination of maximum salaries, the annual increment for experience, the rhythm of these increases, in theory, should depend on the impact of experience on efficiency.

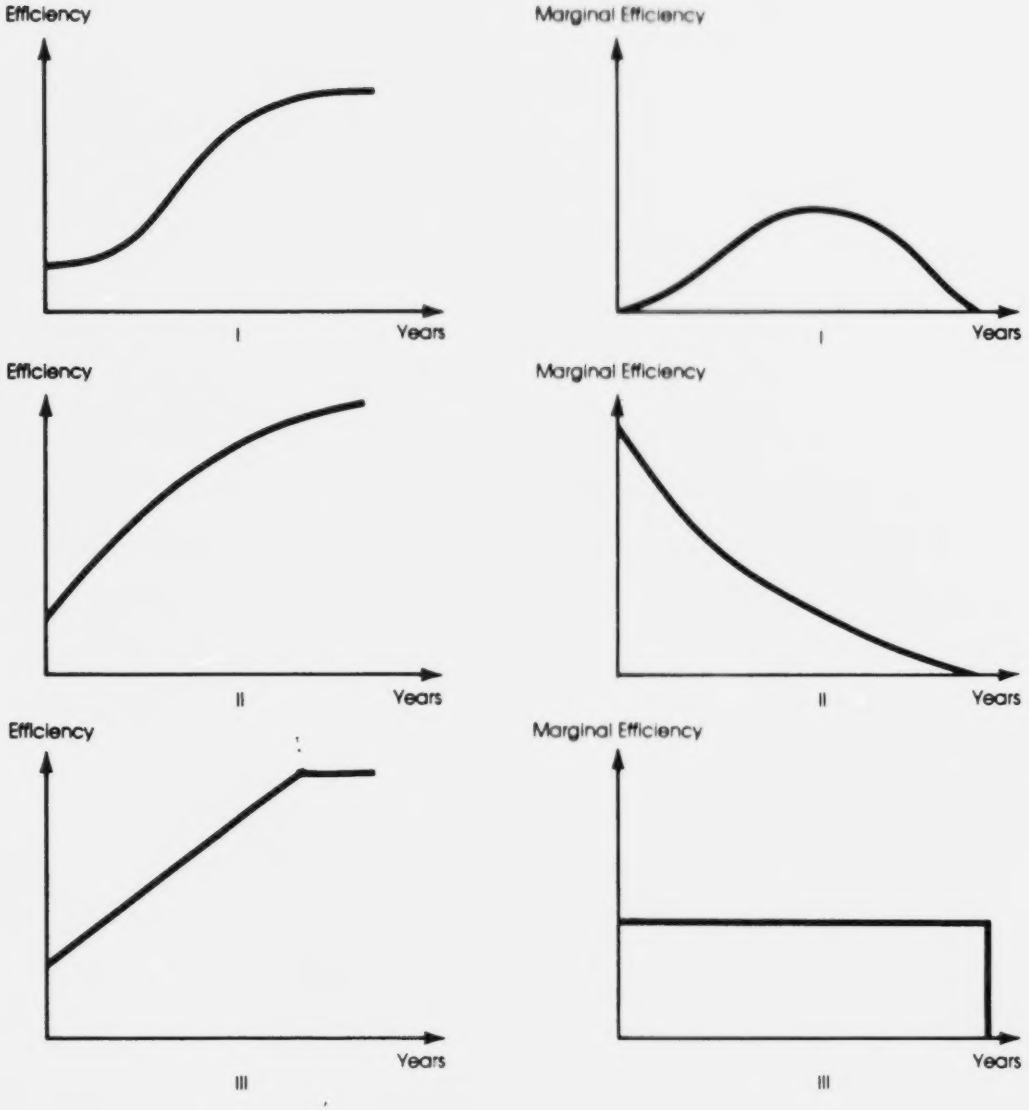
If we accept the assumption of a relation between years of experience and efficiency, the problem is to determine the nature of this relationship. Again, theoretically, we can assume three plausible types of functions relating experience to efficiency.

1/ The differential can be considered as an annuity received over the employment life of the teacher, and should be equal to the foregone earnings and cost of further training.

$$C = A\frac{\left[1 - \frac{1}{(1+r)^n}\right]}{r}$$

Where C = opportunity cost of further training
A = annuity
r = interest rate
n = number of working years.

TOTAL AND MARGINAL EFFICIENCY OF TEACHING



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In the first case, teachers's effectiveness increases slowly at first, then it accelerates and later on the rate decreases to become zero (presumably at the time the salary reaches a maximum). In the second case, experience increases at a decreasing rate i.e. the first year gains in experience are the largest. In the third case, the increases in effectiveness is constant up to the maximum and then ceases altogether. The economic implications for the budget of each of these assumptions is different and depends very much on the age distribution of the teaching force. If the purpose is to minimize costs in the short run, and the bulk of the teaching force is young, then the application of assumption I is the most productive. If most teachers are older, assumption II might be more useful.

The maximum/minimum ration and the differential between categories can also be adjusted for specific purposes. We can affect costs if we can decrease the maximum/minimum ratio by either increasing the minimum or increasing the minimum faster than the maximum or if we reduce differentials among different types of training. Another way of compressing the salary scale is to provide an "across-the-board" increase.

$$\frac{M + X}{N + X} < \frac{M}{N}$$

M = maximum salary
N = minimum salary
X = increment

Besides structuring the salary scale to accommodate the budget, it is possible to adjust the scale to attract better candidates to the

teaching profession, to encourage teachers to improve their performance, and attract teachers into subject areas where there is excess demand over supply, for example science and mathematics teaching. For these purposes, other pay systems can be instituted: the "merit rating system," the "subject differential" scale, and the "differentiated" pay scale.

In the "merit system," the allocation of salaries is on the basis of difference of performance. Sometimes it means that supplements are added to the unified scale for better than average performance. The basic assumption is that higher pay is an incentive to increase effort and performance.

In the "subject-differential" pay scale, there are additional steps to compensate or attract teachers with backgrounds in fields where there are severe shortages. In this case, there are three factors determining salary: education, experience and subject matter. The "differentiated pay scale" supplies flexibility in the salary structure by providing schedule supplements attached to specialized duties such as administrative positions or special teaching posts, supervisors, and team leaders, including special salaries levels for interns, less than full fledged teachers, etc.

Each of these systems has advantages and disadvantages. The "unified" or "single" salary schedule is simple and administratively easy to implement. It makes it easy to calculate the budget; teachers feel secure with it. But at the same time, it ignores supply and demand

conditions in specific subject areas, in individual performance, and concentrates only on the individual's education and experience.

The "merit system" overcomes the latter objections, but only in theory, because evaluation of performance is largely subjective and unreliable. There is the danger that arbitrary judgements of supervisors may lead to favoritism and low morale. Teachers usually feel that higher salaries will go to those that conform to the supervisors wishes rather than to those that may be doing an outstanding job.

The "subject differential" salary scale, while solving the problem of scarcities, may imperil teachers' morale and hence effectiveness, by creating different "types" of teachers. It may create administrative problems when the scarcity is over.

The "differentiated" salary scale is attractive for creating new career patterns and for adjusting to new educational technologies and division of labor. But this type of remuneration scale requires a re-examination of educational objectives, criteria of effectiveness and the role of the teacher. The implementation of this system is also very complex since it requires restructuring of the whole system and redefinition of traditional roles.

Salary incentives are fundamental, but not only variables affecting the attractiveness of the teaching profession. The establishment of better working conditions, the attractiveness of the working place, the adequacy of materials and equipment, higher status, participation in

decision making, etc. are important means for recruiting and retaining good staff.

III. Supplements to Teacher Salaries

In addition to a base salary determined by the application of the above explained scales, teachers receive various supplemental payments. These additional benefits could include a wide variety of allowances and, in some cases, the accumulated effect of several of these indemnities adds substantially to the gross expenditure of a teachers's remuneration (up to 30% in some SSA countries). The following discussion explains the different types of benefits commonly received by teachers in Sub-Saharan Africa.

Supplements Related to Work

Where teacher salary scales are incorporated into the civil service pay scales and they receive an established percentage differential above the same grade and level of civil servants, that differential is considered a professional supplement. This offers a means to adjust the remuneration of teachers without altering the basic government scales. It is also a statement that teachers have a higher professional status than equally qualified (i.e. educated) civil servants.

A teachers's basic duties consist of a required number of classroom hours of teaching and the ancillary activities associated with that work: preparation of lessons, correction of exercises, etc. In addition, teachers may perform a few hours of administrative work per week as a regular part of their job. An established regulation usually denotes

the minimum and maximum number of hours of teaching and/or administrative work teachers are expected to engage in. In some instances, responsibilities assumed beyond the statutory standards are compensated by supplemental payments.

For example, teachers working extra hours could receive overtime premiums, or those performing supervisory or administrative tasks in addition to their normal classroom work would receive a responsibility supplement. However, it is more often the case that different salary scale grades exist for the different levels of responsibility in the school system. Teachers may also be compensated for any non-teaching activities they undertake (e.g. coaching, counseling), though extracurricular activities are usually performed on a voluntary basis.

Supplements Related to Welfare

In most Sub-Saharan countries educational authorities are faced with problems of staffing schools in remote rural areas. Residential allowances are usually paid to teachers hired to work in these regions. Regions of a country that are difficult to get to, and areas that lack commercial facilities and general government services and have no amenities such as running water or electricity present genuine hardships to inhabitants not originally from the area. Teacher can only be attracted to accept posting in these more isolated areas by the offer of a wage differential that would compensate for the above described conditions.

As in most government jobs, teaching involves accepting the post to which you are assigned and being subject to transfers after a fixed

number of years in one location. Perhaps because of this, a housing indemnity is offered in almost all SSA countries. In some cases the government guarantees and supplies teachers housing. In other countries, or where it is not possible to directly provide a dwelling, the government supplements teachers' monthly salaries with an allowance to either cover rent or permit the purchase of a house.

In addition to helping ensure housing for teachers, the government usually covers any travel expenses incurred through or for work. For example, travel to and from a new post is paid for as are any official trips, travel to obtain services, and, in some cases, vacation trips to a designated home region.

Family allowances are a standard component of teacher remuneration. All of the countries surveyed provide indemnities for married teachers and for dependent children. The amount of the monthly supplement usually depends on the number of children, and in some instances the sex of the parent (In Zaire women are paid a lower family allowance than men). Theoretically, the support per child can increase, stay the same, or decrease with the number of children depending on the assumption about the marginal burden of a child. But in practice it is more determined by the availability of budgetary resources.

When teachers or their families suffer from illness, the government in all countries intervenes to either cover medical expenses and/or provide sick leave. Either medical treatment is provided free of charge to teachers and their dependents at state hospitals, or the

government reimburses all or a designated percentage (e.g. 80%) of the cost of treatment in a private facility. Sick leave with pay is normally permitted for a set time period (3 to 6 months) and additional leave at half pay (3 to 6 months also) would follow that initial period if more time off was necessary. Beyond the established limit of sick leave, if a teacher continued to be absent for medical reasons, it would be without pay.

Maternity leave is available everywhere and usually ranges from 12 to 14 weeks with some time off allowed before giving birth and some designated for afterwards. This leave is provided at full pay or, at least, at half pay.

As discussed in a previous section, passage from one salary grade to another usually calls for the successful completion of the qualifications that the higher grade requires. In an effort to encourage teachers to upgrade their qualifications, some countries provide a study allowance to teachers continuing their education. This allowance can take the form of free tuition, a scholarship to cover tuition and/or room and board, or the payment of all or part of a teacher's salary while she is in school or participating in in-service training.

Supplementary payments are established as either absolute fixed amounts or a given percentage of a base salary. An absolute allowance usually takes the form of a determined monthly allotment. The size of the allotment is determined by a teacher's place on the salary scale - teachers in the higher grades receiving the larger monthly payments. If the monthly

allowance is established as a percentage of the teachers earnings, then automatically higher grades and higher steps on the salary scale would receive larger allowances.

IV. Teachers Salaries in Sub-Saharan Africa

Categories of Teachers

The most important determinant of a teacher's salary is the category assigned on entering the profession. In SSA these categories are numerous and vary from country to country. However, in general there are some common elements: the required qualifications, education, and teacher training, and the corresponding categories.

There are two basic systems of teacher training in SSA. In one system (secondary level training) the training of teachers takes place in teachers' colleges or "normal" schools. These are specialized secondary schools emphasizing a concentration in teacher training which students attend either directly after completing primary education or after a preliminary cycle of lower secondary schooling. Teacher training colleges provide the students with a general secondary education and the necessary training in subjects related to education (e.g. psychology, pedagogy, methodology, etc.). A teacher training curriculum also includes a cycle of practice teaching, the completion of which is a prerequisite for certification as a qualified primary school teacher. In this kind of system, teacher certification is equivalent to a high school diploma. In the other system, primary teacher training is not part of general secondary education. In this type of system prospective teachers complete either a

junior or senior secondary cycle of schooling and only then enter pedagogical training. The training takes place in teacher training institutes which usually function separately from the university system. No country requires a university level degree or training for primary teacher certification, however the training received in teacher training institutes can be considered in many cases post secondary education. Teaching certification is obtained in addition to a secondary school diploma.

In either system, the highest salary scale corresponds to the highest level of qualification. For example, in many West African countries using post-secondary training the category "Instituteur" contains teachers having completed lower or upper secondary schooling (brevet or baccalaureate) and the required number of years of additional teacher training. In most anglophone countries using the British system of education, the highest category is composed of teachers with an upper secondary ("O" level) diploma plus teacher training. Lower categories contain teachers who have either less training, less education, or both.

In some countries a single category contains teachers who have obtained their qualification through different means. For example, in Togo an "instituteur" (category 3) has either a lower secondary diploma (brevet) and 3 years of training or a higher secondary Certificate (Baccalaureate) and 2 years of experience. Both types of instituteurs however must succeed at a professional examination in order to be certified. Some examples may help to illustrate how different categories are determined.

In Mali, "Maitres deuxieme cycle", some of whom teach primary school, have completed lower secondary and four years of teacher training while "Maitres de premier cycle" have completed lower secondary and only two years of teacher training. In Ghana, "Certificate A" teachers are divided into two categories: those who have completed upper secondary ("O" level - eleven years general education) and 3 years of teacher training and those who have completed lower secondary (ten years general education) and four years of training. All Kenyan qualified teachers have had two years of training. In this case the different categories correspond to completed upper secondary, completed lower secondary, and completed primary. In Zambia a classification is based not only on the requisite number of years of education but also on whether an examination at the end of the cycle has been successfully taken. Upper secondary leavers with two years of training are divided into two categories, those with a state diploma and those without. Teachers not holding a diploma are placed in the same grade as lower secondary leavers with teacher training.

The following table presents the various levels of education and training required for one or more categories of teachers in 36 countries. The total number of years of pre-service education and training (TOTAL YRS EDUC) is given and then broken down into the highest completed cycle of general education (HIGHEST GEN ED and GEN) and the amount of teacher training (TCH TRGN). Where a single category is given (denoted by H) it corresponds to the highest qualified category of primary teachers. In countries showing more than one category, the grades are numbered from lower to higher qualification.

TABLE 3

EDUCATION AND TRAINING OF PRIMARY TEACHERS BY COUNTRY AND CATEGORY

COUNTRY	TCH CATEGORY	TOTAL YRS EDUC	HIGHEST GEN ED	GEN	+ TCH TRNG
BENIN	H	11	LS	10	1
C.A.R.	1	14	US	13	1
	2	15	US	13	*2
	3	15	US	13	2
CONGO	1	11	LS	10	1
	2	13	LS	10	3
	3	14	US	13	1
GABON	1	12	LS	10	2
	2	14	LS	10	4
GUINEA	H	11	LS	8	3
R.C.I.	1	11	LS	10	1
	2	13	LS	10	3
TOGO	2	11	LS	10	1
	3	13	LS	10	3
ETHIOPIA	1	13	US	12	1
	2	14	US	12	2
	3	16	US	12	4
KENYA	1	< 10	P	< 8	2
	2	10/12	LS	8/10	2
	3	14	US "O"	12	*2
	4	14	US "O"	12	2
MAURITIUS	1	15	US	13	2
	2	same as cat. 1 plus 15 yrs exp			
SOMALIA	1	10	P	8	2
	2	13	US	12	1
SUDAN	1	13	LS	9	3
	2	13	US	12	1
UGANDA	1	11	P	7	4
	2	11	LS	9	2
	3	13	US	11	2
BURUNDI	H	12	LS	10	2
DJIBOUTI	1	12	LS	10	2
	2	13	LS	10	3
MADAGASCAR	1	< 10	P	5	-
	2	10	P	5	5
	3	13	P	5	8
RWANDA	1	< 12	P	8	-
	2	12/13	P	8	4/5
	3	14/15	P	8	6/7
ZAIRE	1	10	LS	8	2
	2	12	LS	8	4
GHANA	1	10	LS	10	0
	2	11	US "O"	11	0
	3	14	LS	10	4
	4	14	US "O"	11	3
GUINEA-BIS	H	12	P	9	3
LIBERIA	H	12	LS	9	3
NIGERIA	1	11	P/LS	6/9	5/3
	2	12	US "A"	12	PRACT
	3	14	US "O"	11	3
SIERRA-L	1	15	US	12	3
	2	15	US	12	3
BURKINA	H	12	LS	10	2
CAPE VERDE	H	11	LS	9	2
CHAD	1	12	LS	10	2
	2	13	LS	10	3
GAMBIA	H	13	US "O"	11	2
MALI	1	11	LS	9	2
	2	13	LS	9	4
MAURITANIA	H	12	LS	9	3
NIGER	1	12	LS	10	2
	2	14	LS	10	4
SENEGAL	1	12	LS	10	2
	2	16	US	13	3
BOTSWANA	H	12	LS	10	2
LESOTHO	H	13	LS	10	3
MALAWI	1	5	P	5	0
	2	8	P	8	0
	3	12	LS	10	2
	4	14	US	12	2
SWAZILAND	1	12	LS	10	2
	2	14	LS	10	4
TANZANIA	1	10	P	7	3
	2	13	LS	11	2
ZAMBIA	1	8	P	8	0
	2	10	P	8	2
	3	12/14	LS/US	10/*12	2
	4	14	US	12	2

NOTES:
In the column "HIGHEST GEN ED" the abbreviations used refer to the highest completed cycle of education and are defined as:

P - primary education
LS - lower secondary
US - upper secondary school
A" and "O" - British system advanced and ordinary levels

* indicates that teachers in the category have completed the same level of edcuation or training as the next highest category but have not received certification.

This table shows that the most common highest category of teacher is the one which requires lower or secondary education plus professional training. This is in line with the "professionalization" of primary teaching as advocated by Unesco, but in each of the countries presented other categories below the "desired" level exist. These categories are rooted in the history of the development of education in SSA.

Historically, teacher training in SSA had a low priority. In the past the need for professional training of primary school teachers was not convincingly put forward and the prevailing attitude was that any literate person could teach. It is only recently that the teaching profession has been upgraded enough to warrant specialized attention to the training of teaching professionals.

Missionaries, whose primary role was the christianization and "civilization" of Africans, also served to train the teachers they would need to staff their schools. Local mission students who earned the favor of the evangelist overseer often graduated to become catechists or pupil teachers. These preferred Africans became village teachers or were chosen to continue their education. Primary school teachers were often only primary or lower secondary graduates who received on the job training. Many of the older experienced teachers today are products of mission schooling. 1/

1/ Dove, Linda, A. Teaching and Teacher Education in Developing Countries. Croan Helen, Kent: 1986.

Missionaries who brought formal western education to the area, also introduced the western models for teacher training. The patterns observed in table 3 of a post-lower secondary training in professional institutes or the specialized normal schools, are copies of the British and French systems as transported by missionaries in the twentieth century.

With independence, governments began to build up national school systems and to take over the responsibility for education and the training of teachers from the mission societies, though in many Sub-Saharan Countries mission schools still function alongside the government systems of education. In 1966, seeing the need to establish international standards in the profession, UNESCO published a Recommendation Concerning the Status of Teachers. Principles laid down in this document intended to professionalize teaching through calling for approved teacher training courses in appropriate training institutions on the post-secondary level as a basic requirement to enter the field. The 1970's witnessed a tendency to raise the level of teacher training and to adopt the ideals of the UNESCO recommendation.

The presence of less trained and qualified teachers is a problem across Sub-Saharan Africa. The following table illustrates the proportion of teachers in each grade, including unqualified teachers. It also gives the average years of experience of the teachers in each category so that some assumptions can be made about the relative ages of the teachers in the different groups and the hiring practices of the different countries.

TABLE 4

DISTRIBUTIONS OF PRIMARY TEACHERS BY CATEGORY OF QUALIFICATION

COUNTRY	TEACHER CATEGORIES	PROPORT. OF TCH IN CATEGORY	AVG YRS EXP
BENIN	unqualified	73.90%	3.8
	2	6.77%	5.9
	3	19.42%	5.3
C.A.R.	unqualified	32.93%	2.6
	2	42.47%	3.7
	3	24.60%	2.6
(b) EQ. GUINEA	unqualified	60.00%	
GUINEA	unqualified	53.48%	8.2
	2	46.52%	9.1
COTE D'IVOIRE	1	45.59%	4.7
	2	54.21%	6.3
TOGO	unqualified	16.04%	10.5
	2	39.55%	7.7
	3	27.42%	7.9
ETHIOPIA	1	20.78%	2.0
	2	30.62%	3.3
	3	30.36%	2.1
	4	17.84%	5.5
KENYA	untrained	30.62%	12.4
	2	8.66%	18.0
	3	18.72%	14.1
	4	42.16%	17.4
MAURITIUS	1	92.29%	16.1
	2	7.71%	19.6
SOMALIA	unqualified	68.77%	
	temporary	28.65%	
	3	2.58%	
(a) UGANDA	unqualified	50.00%	
BURUNDI	1	66.03%	7.6
	2	33.97%	5.0
DJIBOUTI	1	59.95%	8.5
	2	40.05%	10.4
MADAGASCAR	unqualified	8.96%	11.0
	2	79.23%	14.1
	3	11.81%	7.9
RWANDA	unqualified	21.90%	13.0
	2	65.21%	7.2
	3	12.89%	6.3
ZAIRE	1	58.50%	12.4
	2	41.50%	5.3
(a) GHANA	unqualified	36.00%	
GUINEA-BISSAU	unqualified	42.55%	
(a) LIBERIA	unqualified	71.00%	
NIGERIA	unqualified	12.70%	
	3	25.60%	
	5	52.20%	
	2	5.70%	
	4	5.70%	
(a) SIERRA LEONE	unqualified	61.00%	
BURKINA-FASO	1	63.69%	4.2
	2	36.31%	13.0
CAPE VERDE	unqualified	83.70%	
CHAD	unqualified	59.20%	
	2	20.60%	
	3	19.40%	
GAMBIA	unqualified	64.53%	4.9
	2	35.47%	9.4
MALI	1	62.31%	12.3
	2	37.69%	4.5
MAURITANIA	unqualified	6.99%	7.3
	2	10.20%	6.1
	3	82.81%	2.3
NIGER	unqualified	15.94%	3.4
	2	70.39%	5.6
	3	13.67%	5.1
SENEGAL	unqualified	1.54%	9.4
	2	45.33%	7.6
	3	53.12%	8.5
(a) BOTSWANA	unqualified	36.00%	
(a) LESOTHO	unqualified	36.00%	
MALAWI	unqualified	15.71%	
	qualified	84.29%	
(a) SWAZILAND	unqualified	23.00%	
TANZANIA	1	74.23%	
	2	25.77%	
ZAMBIA	unqualified	15.00%	
	2	8.38%	13.5
	3	46.02%	4.0
	4	20.06%	2.1
ZIMBABWE	unqualified	40.00%	

Unqualified is defined as having completed less than upper secondary general education and having had no professional training, or having completed primary education and having had only minimal professional training.

(a) Countries for which only information on the percentage of unqualified teachers in the primary teaching force was available.
Source: Dove, Linda, A. Teaching and Teacher Education in Developing Countries, Croom Helm, Kent, 1986.

(b) Unqualified defined as having recevied no professional training

In the 33 countries for which data are available, there are 10 where the majority of the teachers are unqualified. In only three countries, Cote d'Ivoire, Senegal, and Mauritania the majority of the teachers are in the "desired" category. The average years of experience of teachers in each category provides an indication of recent hiring trends. Two distinct patterns emerge from the data. One group consists of countries in which the unqualified or least qualified categories of teachers are a minority of the teaching force and have higher average years of experience than the higher qualified teachers. This would indicate that the lower qualified category is being phased out and the system is being upgraded as new hires consist of more qualified personnel. Good examples of this are Rwanda, Togo, and Zambia. In Rwanda, the unqualified teachers, those having complete primary but an incomplete specialized secondary education, are 21.9% of the teaching force and are, on average, two or three times as experienced as their qualified colleagues.

The other group of countries show an opposite pattern of experience and distribution of teachers in the different categories. For example, Burkina-Faso has 63.69% of its teachers in the lower qualified category and they have, on average, about a third of the experience of the higher qualified instructors. The Gambia similarly has a teaching force that is 64.53% unqualified, and those teachers are about half as experienced as their qualified peers. This type of pattern of experience and teacher distribution would indicate that lower qualified or unqualified categories of teachers are only recent hires and that the system has been experiencing a downgrading of its teachers. These different patterns are probably the result of different rates of expansion of primary education

accompanied by a budget squeeze. For the examples cited above, the countries experiencing an upgrading - Rwanda, Zambia and Togo - had seen their numbers of teachers grow by 25%, 27% and 9% respectively between 1980 and 1985. The countries exhibiting a downgrading of teacher qualifications - Burkina-Faso and The Gambia - experienced a 64% growth in their teaching force during those same years. The pressure of a rapidly expanding system and the low production of qualified teachers because of budgetary restrictions compelled these systems to hire less qualified teachers.

As can be seen in Table 4, many SSA countries have significant proportions of unqualified and underqualified personnel presently in their teaching forces. Any recommendations concerning improvements in the quality of primary education in Africa must address the large numbers of untrained teachers already in the field.

Comparison of Salary Structures

In comparing structures of salary scales two factors should be considered: 1) ratio of maximum and minimum salaries in each category, 2) the years required to go from the minimum to the maximum. The average salary increase per year for a teacher in a given category (the slope of the salary scale) is determined by 1 and 2. To facilitate analysis all ratios are referred to a numeraire, the entry salary of the least qualified teacher. Table 5 presents this information for 22 SSA countries.

TABLE 5

STRUCTURE OF SALARY SCALES BY COUNTRY

COUNTRY	TEACHER CATEGORIES	RATIOS OF SALARIES TO MIN SALARY TCH 1 MIN	MAX	YEARS MIN TO MAX	PERCENT CHANGE PER YEAR (SAL)
BENIN	1	1.00	1.80	17	3.52%
	2	1.25	2.30	17	3.65%
	3	1.40	2.65	17	3.82%
C.A.R.	1	1.00	1.66	18	2.87%
	2	1.54	3.32	23	3.39%
	3	1.88	3.96	21	3.60%
GUINEA	1	1.00	1.67	27	1.91%
	2	1.60	2.56	26	2.06%
COTE D'IVOIR	1	1.00	1.60	19	2.49%
	2	1.83	3.41	23	2.75%
TOGO	1	1.00	2.48	21	4.42%
	2	2.04	3.89	23	2.85%
	3	2.78	6.28	23	3.75%
ETHIOPIA	1	1.00	2.13	21	3.67%
	2	1.19	2.42	21	3.44%
	3	1.50	2.91	21	3.19%
	4	1.86	3.48	21	3.02%
KENYA	1	1.00	2.40	22	4.05%
	2	1.64	2.87	16	3.56%
	3	1.91	3.19	15	3.49%
	4	2.68	4.60	16	3.44%
MAURITIUS	1	1.00	2.17	19	4.15%
	2	2.17	2.57	8	2.88%
SUDAN	1	1.00	3.25	29	4.16%
	2	1.08	3.25	27	4.18%
BURUNDI	1	1.00	2.10	13	5.89%
	2	1.60	3.21	13	5.60%
DJIBOUTI	1	1.00	1.85	24	2.59%
	2	1.28	2.30	24	2.46%
MADAGASCAR	1	1.00	1.46	18	2.11%
	2	1.26	1.90	18	2.28%
	3	1.69	2.84	18	2.92%
RWANDA	1	1.00	2.66	28	3.55%
	2	1.66	3.69	28	2.90%
	3	2.19	5.16	28	3.10%
ZAIRE	1	1.00	1.81	28	2.13%
	2	1.08	1.96	28	2.14%
GHANA	1	1.00	1.11	5	2.16%
	2	1.14	1.34	8	2.01%
	3	1.56	1.90	13	1.51%
	4	1.70	1.90	8	1.38%
NIGERIA	1	1.00	2.68	15	6.79%
	2	1.13	3.05	15	6.85%
	3	1.38	3.73	15	6.85%
	4	1.81	5.10	15	7.16%
SIERRA LEONE	1	1.00	1.56		
	2	1.07	2.05		
	3	1.39	5.07		
BURKINA-FASO	1	1.00	2.04	24	3.02%
	2	1.21	2.32	18	3.69%
GAMBIA	1	1.00	1.10	6	1.56%
	2	1.57	2.68	30	1.80%
MALI	1	1.00	1.53	29	1.47%
	2	1.23	1.71	20	1.67%
MAURITANIA	1	1.00	1.34	24	1.23%
	2	1.31	1.77	24	1.26%
	3	1.31	2.42	24	2.59%
NIGER	1	1.00	2.08	21	3.55%
	2	1.37	2.73	21	3.36%
	3	2.28	4.73	21	3.55%
SENEGAL	1	1.00	1.18	25	0.66%
	2	1.05	1.38	21	1.23%
	3	1.22	1.94	21	2.23%
MALAWI	1	1.00	1.68	9	5.90%
	2	1.23	2.08	9	6.03%
	3	1.88	2.93	9	5.07%
	4	2.28	3.40	9	4.57%
ZAMBIA	1	1.12	1.12	--	--
	2	1.00	1.62	19	2.58%
	3	1.48	1.87	11	2.15%
	4	1.66	2.53	17	2.88%

The countries with the smallest initial salary differentials between the highest and least qualified categories of teachers are Zaire -ratio of minimum salary of highest category to minimum salary of lowest category--(1.08), Senegal (1.22), Burkina (1.21). Djibouti (1.28), and Sierra Leone (1.39). Largest differentials of maximums of highest and lowest categories are evident in Togo (2.78), Malawi (2.28), Niger (2.28), Kenya (2.2), and Rwanda (2.19). When the slopes of higher category teachers is greater than those of lower category, the ratio of maximums between categories becomes larger. This is the case of Sierra Leone and Senegal where the ratios among the maximums of the different categories are 3.25 and 1.64 respectively. This pattern is evident in 7 of the 22 countries. When the slope is similar (in 11 of the 22 cases) the ratios among maximums remain the same as they were for the minimums. For example, for Zaire, Djibouti, and Burkina Faso the ratios of maximums are 1.04, 1.24, and 1.13 respectively. In only two cases, Rwanda and Malawi, the slopes for the higher category of teacher is lower than those of the lower category .

Supplements to Teachers' Pay

The earlier section on supplements to teacher salaries discussed the different types of additional payments received by teachers. The salary supplements discussed here are what the earlier section referred to as supplements related to welfare, namely, housing, family, and hardship allowances. In some SSA countries primary teachers receive other allowances (e.g. for travel or study), but these types of allowances are paid only to those teachers incurring additional expenses (through work related travel or in continuing their education). It would be difficult to estimate the numbers of teachers benefitting from supplements of this

nature. Therefore the discussion in this section is limited to the kinds of allowance most teachers receive regularly.

Not all SSA countries provide teachers with housing. In those countries that do, if direct monthly payments are not received to cover housing costs, the government usually provides teachers a place to live. For example, in Zambia, teachers are provided housing by the government for which they must pay 12.5% of their monthly salary as rent. If teachers make their own housing arrangements, they receive a tax-free monthly allowance of 90 kwacha. Housing supplements can constitute as much as a 27% addition to a teachers monthly salary, as is the case in Senegal.

Family allowances are more common and range from as little as less than a 1% increase in a teacher's remuneration in Zaire, to as much as a 16% increase in Togo. The family supplements are based on the number of children and they allow a per child payment usually for up to six children.

Only teachers working in specified regions of a country receive hardship supplements. In some cases a predetermined percentage of a teachers's base salary is awarded as compensation for working in any of the hardship areas. For example in Kenya teachers working in any of 11 districts receive a 30% supplement, up to a maximum of 1200 shillings per month for married personnel. In other SSA countries the amount of the supplement depends on the district in which the teacher is posted. In Mali, teachers working in one of 17 zones receive a hardship allowance equal to roughly 5% of their base salary while teachers working in certain

parts of the region of Cao receive an allowance equal to about 14% of their base pay.

No data are available on the numbers of teachers in different countries actually receiving various supplemental payments. For this reason it is difficult to estimate the budgetary impact of teacher salary supplements. However, some indication of the cumulative size of housing, family, and hardship salary supplements is presented in the following table. The monthly supplements included in these estimations are based on the assumption that a teacher receives the average housing and hardship allowances, and the family allowance for a married parent of four children.

Total salary supplements can constitute a 32% increase in the teacher salary bill as in Senegal, or as little as an 8 to 9% increase as in Madagascar or Zaire. On average the various allowances create a 20% augmentation in the base salary costs for primary teachers.

TABLE 6

Monthly supplements to primary teacher salaries as percentage of the average monthly salary assuming that a typical teacher receives the average housing and hardship allowances and the family allowance for a married parent of four children.

	AVERAGE SALARY*	SUPPL. AS % OF AVG SAL	PERCENTAGE OF SUPPLEMENT For: Housing	Family	Hardship
# BENIN	$36,190	6.38%			
# BURKINA	$44,273	45.17%			
MADAG	$72,114	8.60%		100%	
MALI	$44,106	21.92%	16%	41%	43%
# MAURITIUS	$2,625	0.19%			
SENEGAL	$146,308	32.32%	85%	15%	
ZAIRE	$4,711	8.81%	95%	5%	
ZAMBIA	$539	16.69%	100%		
TOGO	$48,910	16.36%		100%	
RCI	$171,687	20.82%		28%	72%

* Average monthly salary in local currency.
# Data taken from ILO October Inquiry of 1985.

THE RELATIVE VALUE OF PRIMARY TEACHERS' SALARIES

Ratio Primary Teacher Salaries to GNP per capita. Average primary teacher salary to GNPCAP for SSA is 6.34 with a standard deviation of 3.4 (see Table 7). This indicates that the ratio takes on a broad range of values in Africa, going from a low of 1.5 in Equatorial Guinea and Ghana to a high of 14.7 in Ethiopia.

Table 7 also shows that francophone countries in SSA have a higher mean ratio of average primary teacher salary to GNPCAP (7.6) than non-francophone countries (5.1). However there is considerable variation in both subgroups. Summary statistics for the six World Bank regions are also given in the table.

No relationship between the ratio of average teacher salary to GNP per capita and the level of national income of a country is apparent for the full SSA sample, though in low income countries (GNPCAP <= $US 200) a negative relationship between these variables does exist.1/.

1/ Regression of the ratio of average primary teacher salaries on GNPCAP for the sub-sample of 8 countries with GNPCAP less than or equal to $US 200 resulted in a beta estimate of -4.7 with a standard error of 2.0 and an R-squared of .48. The regressions for the full sample and for the sum-sample of countries with GNPCAP greater than $US 200 did not have significant results.

TABLE 7

AVERAGE PRIMARY TEACHER SALARIES COMPARED TO GNPCAP: 1985
(figures are in local currencies)

COUNTRY	1 AVG TCH SAL	2 GNPCAP	RATIO 1:2	FRANCO	REGION
BENIN	$425,439	$127,176	3.3	X	AF1
C.A.R	$913,353	$121,300	7.5	X	AF1
EQ. GUINEA	$180,000	$121,300	1.5	O	AF1
R.C.I.	$2,121,081	$270,402	7.8	X	AF1
ETHIOPIA	$3,341	$228	14.7	O	AF2
KENYA	$23,777	$4,528	5.3	O	AF2
MAURITIUS	$146,110	$15,525	9.4	X	AF2
SUDAN	$6,100	$760	8.0	O	AF2
BURUNDI	$210,548	$30,460	6.9	X	AF3
MADAGASCAR	$577,002	$165,620	3.5	X	AF3
RWANDA	$229,437	$29,366	7.8	X	AF3
ZAIRE	$26,207	$8,478	3.1	X	AF3
GHANA	$38,989	$25,326	1.5	O	AF4
GUINEA-BIS	$179,385	$27,135	6.6	O	AF4
BURKINA	$696,339	$69,488	10.0	X	AF5
CAPE VERDE	$81,900	$37,203	2.2	O	AF5
CHAD	$267,060	$50,120	5.3	X	AF5
GAMBIA	$2,771	$896	3.1	O	AF5
MALI	$821,804	$65,100	12.6	X	AF5
MAURITANIA	$302,567	$31,605	9.6	X	AF5
NIGER	$828,119	$89,852	9.2	X	AF5
SENEGAL	$1,614,977	$166,226	9.7	X	AF5
BOTSWANA	$5,395	$1,809	3.0	O	AF6
MALAWI	$1,117	$293	3.8	O	AF6
SWAZILAND	$3,879	$1,445	2.7	O	AF6
TANZANIA	$39,772	$4,293	9.3	O	AF6
ZAMBIA	$4,151	$1,057	3.9	O	AF6
ZIMBABWE	$5,445	$904	6.0	O	AF6

* In the column franco, X denotes francophone countries and O denotes non-francophone. The Regions correspond to the World Bank divisions of Africa.

SUMMARY STATISTICS: Ratio of Average Primary Teacher Salaries to GNPCAP.

	MEAN	VAR	STD	N
TOTAL SAMPLE	6.34	11.881	3.447	28
FRANCOPHONE	7.56	8.190	2.862	14
OTHER	5.11	13.246	3.639	14
REGIONS:				
AF1	5.05	9.860	3.140	4
AF2	9.34	15.631	3.954	4
AF3	5.33	5.697	2.387	4
AF4	4.08	12.859	3.586	2
AF5	7.72	13.796	3.714	8
AF6	4.78	6.186	2.487	6
GNPCAP:				
<= $US 200	8.17	17.420	4.174	8
> $US 200	5.60	8.730	2.955	20

In very low income countries a teacher's salary is many times the national income per capita but this higher ratio is more a reflection of the low national income per capita rather than high level of teachers salaries. With GNPCAP below $US 200, having any salaried "modern sector" occupation virtually guarantees an individual a salary well above the national per capita income.

Relative Wages. Comparing average primary teacher salaries to GNPCAP does facilitate cross country comparisons, but this ratio alone does not indicate the relative value of teachers' salaries compared to other occupations' wages. A comparison of average teacher salaries to the average salaries of other occupations affords an estimate of the relative status of the teaching profession.

ILO data on the average salaries of stenographer/typists in the wholesale trade and banking sector and of auto mechanics were compared to the average salaries of primary teachers in a given year (1985 or 86). The ratios of average primary teacher salary to the average stenographer/typist salary and average auto mechanic salary were computed for nine countries and are shown in table 8. In six of the nine countries primary teachers earn an average salary that is less than the average wage of stenographer/typists and in six out of eight countries teachers, on the average, earn more than auto mechanics. The mean relative wages of primary teachers to stenographer/typists and to auto mechanics are .75 and 1.22 respectively. In general, teachers have a status above that of auto mechanics but below that of stenographer/typists. Two extreme examples

exist, Mali and Cape Verde, in which teachers are paid less than both of these other occupations.

TABLE 8

TEACHER WAGE RATES AS COMPARED TO OTHER OCCUPATIONS
(wage rates are annual averages in local currency)

COUNTRY	(1) 91	(2) 130	(3) AVG 1&2	(4) 110	(5) 150	5:3	5:4
MALI	$640,956	$540,000	$590,478	$540,000	$513,948	0.87	0.95
BURKINA	$460,560	$498,528	$479,544	$460,560	$531,276	1.11	1.15
BURUNDI	$363,987	$572,762	$468,374	$176,389	$210,548	0.45	1.19
BENIN	a $515,400	-	-	-	$565,595	1.10	-
RWANDA	$231,840	$198,720	$215,280	$144,000	$229,437	1.07	1.59
KENYA	$29,972	$83,250	$56,611	$14,539	$15,804	0.28	1.09
ZAMBIA	$4,248	$7,492	$5,870	$3,600	$5,664	0.96	1.57
S_LEONE	-	$17,565	$17,565	$3,402	$6,055	0.34	1.78
CAPE VERDE	$126,000	$160,800	$143,400	$186,000	$81,900	0.57	0.44

Column headings correspond to ILO occupational codes:
91 - Stenographer typist in wholesale industry
130 - Stenographer typist in the Banking sector
110 - Auto mechanic
150 - Primary Teacher
a: For Benin the wage in column (1) is for a receptionist in the hotel industry
SOURCE: ILO Yearly Bulletin, 1987.

Real Average Teacher Salaries in the 1980s Further insight into the relative value of teachers salaries can be gained by examining trends in average salaries over time. Table 9 shows real average primary teacher salaries in 18 SSA countries from 1980 to 1985 (with 1980 as the base year). On the average real primary teacher salaries declined 11.5% between 1980 and 1985. In only two countries (Rwanda and Niger) have average primary teacher salaries increased in real terms. In 10 countries the overall decline exceeded 10%, with the extreme cases of Zimbabwe and the Central African Republic in which real primary teacher salaries decline about 37%. In five of the ten countries real average primary teacher salaries have remained fairly constant. Summary statistics for different sub-samples within this group are also shown in table 9.

TABLE 9

INDICES OF CHANGES IN REAL AVERAGE TEACHER SALARIES: 1980 = 100

YEAR \ COUNTRY	CAR	RCI	MTA	BDI	MAD	RWA	GHA	BUR	GAM
1980	100	100	100	100	100	100	100	100	100
1981	104	93	98	96	100	160	91	110	106
1982	98	85	106	89	64	145	76	98	95
1983	88	86	97	81	57	130	61	132	73
1984	96	96	96	74	61	147	45	96	69
1985	63	88	93	77	71	149	96	81	98

	MLI	MTS	NGR	SEN	MWI	ZAM	ZIM	KEN	SWAZI
1980	100	100	100	100	100	100	100	100	100
1981	105	100	117	84	96	83	92	98	82
1982	99	85	107	84	99	89	89	84	89
1983	91	100	123	77	96	113	72	73	76
1984	83	92	111	76	94	88	55	68	92
1985	90	83	116	74	96		63	71	96

SUMMARY STATISTICS: PERCENT DECLINE IN REAL AVG TEACHER SALARIES 1980-85

	MEAN	VAR	STD	N
FULL SAMPLE*	17.03	143.08	11.96	16
FRANCOPHONE	20.04	95.90	9.79	9
OTHER	13.15	198.70	14.10	7
GNPCAP<$300	19.08	165.55	12.87	8
GNPCAP>$300	14.98	131.43	11.46	8

* Excluding the countries (Rwanda & Niger) in which real average teacher salaries increased.

INDICES OF CHANGES IN REAL AVERAGE MANUFACTURING WAGES: 1980 = 100

YEAR	KENYA	MAURITIUS	MALAWI	SWAZI*	ZAMBIA	ZIMBABWE	BURUNDI	BOTSWANA
1980	100	100	100	100	100	100	100	
1981	99	101	101	78	83	109	145	100
1982	92	93	136	65	78	114	125	86
1983	89	98	96	61	71	105	105	101
1984	89	99	79	63	59	98	127	105
1985	82	99	67	68		103	124	

* For Swaziland real average wages in the transportation, storage and communication sector were used.

SOURCE: ILO Yearly Bulletins.

In several countries the trend in real average primary teacher salaries follows a decreasing, then increasing, then decreasing pattern. This pattern can be explained by the deterioration in real salaries due to inflation being followed by a sudden rise in real salaries when the government grants a pay increase. That increase is then subsequently eroded by the continued effect of inflation.

As discussed earlier, the natural tendency of primary teacher average salaries, because of salary structures, is to increase over time as teachers move up the pay scale. In SSA the general decline in real average teacher salaries is magnified by this fact because the 11.5% average decrease in real salaries occurred while average salaries should have been increasing.

Relative Wages Over Time Table 10 presents the relative average wage of primary teachers to workers in the manufacturing sector from 1980 to 1985.

In Kenya, Malawi, Swaziland, and Zambia, real average wages for both teachers and manufacturing workers have decreased in the 1980s (see table 9). But in Kenya, the relative wage of teachers to manufacturing workers decreased indicating that teachers salaries were more eroded by inflation than were the salaries of workers in manufacturing. In the other three countries, of this group the relative wage increased -- evidence that inflation had the opposite effect.

In Mauritius, Zimbabwe, and Burundi, real wages in manufacturing increased or remained the same while real average primary teacher salaries decreased. This resulted in a greater decline of teachers' relative wages than in the case of Kenya.

TABLE 10

RELATIVE AVERAGE SALARIES OF PRIMARY TEACHERS TO MANUFACTURING WORKERS

YEAR	KENYA	MAURITIUS	MALAWI	SWAZI*	ZAMBIA	ZIMBABWE	BURUNDI	BOTSWANA
1980	1.00	3.25	0.91	0.41	1.05	1.71	1.52	
1981	1.00	2.81	0.86	0.44	1.05	1.43	1.09	1.16
1982	0.92	2.33	0.67	0.56	1.19	1.33	1.04	1.28
1983	0.83	2.45	0.91	0.52	1.66	1.16	0.99	1.04
1984	0.77	2.10	1.09	0.61	1.56	0.96	0.95	1.20
1985	0.87	1.78	1.32	0.59		1.04	1.01	

INDICES OF CHANGES IN RELATIVE SALARIES

YEAR	KENYA	MAURITIUS	MALAWI	SWAZI*	ZAMBIA	ZIMBABWE	BURUNDI	BOTSWANA
1980	100	100	100	100	100	100	100	
1981	99	87	95	105	100	84	71	100
1982	92	72	73	136	114	78	68	110
1983	82	75	100	125	158	68	65	89
1984	77	65	119	146	148	56	62	103
1985	86	55	145	142		61	66	

* For Swaziland, primary teacher average salaries are compared to average salaries in the transportation, storage and communication sector as defined by the ILO.
SOURCE: ILO Yearly Bulletins

V. The Impact of Salary Scales in SSA on Future Costs of Primary Education

Future costs of primary schooling in SSA countries will depend on only on the number of students to be educated and the technology used, but also on the average salary of teachers, since teacher salaries is the largest expenditure item in primary education (in SSA teacher salaries account for more than 90% of the budget). Average teachers' salaries is a function of (a) the characteristics of salary schedules: minimum and

maximum salaries, rate of progression, frequency of promotion, etc.; (b) the distribution of teachers among the different categories; qualified, unqualified, etc.; (c) the initial distribution of teachers on the salary scale within each category; (d) the rate of increase of the teaching force. A forecast of teachers salaries 1/ for 19 SSA countries shows that for all countries we may expect an "upward drift" in average salaries. This upward drift will be strongest during the next ten years and weaker from years 11 to 20.

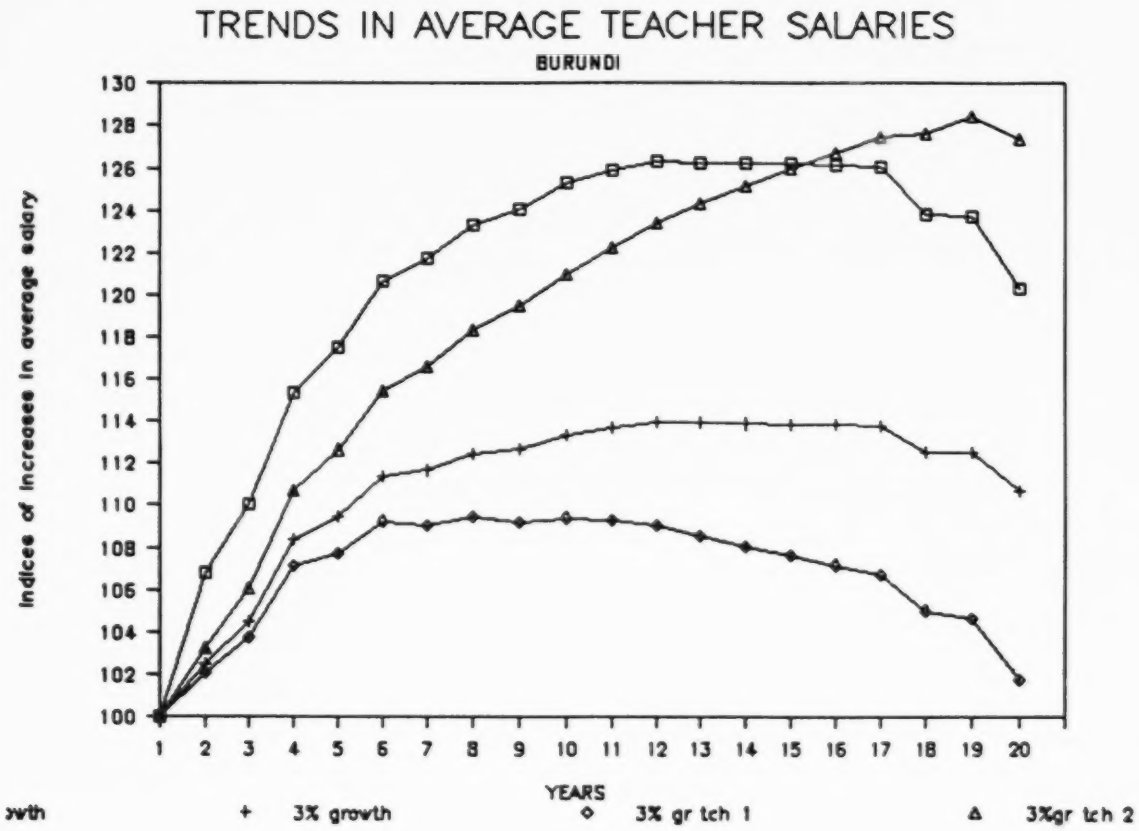
Table 11 presents the drift in salaries as measured in yearly rates of increase of average salaries and total costs. Column (1) presents the case where the number of teachers in each category remains constant, i.e., attrition of teachers in each category is compensated by teachers entering the profession at the lowest end of the salary scale of the corresponding category. Column (2) to (6) assume that the number of teachers increase at 3% corresponding to the average increase of the school age population. Results shown in column (2) are based on the assumption that the proportion of teachers in different categories remains unchanged. Column (3) assumes that all increases will be of teachers of type 1; column (4) assumes teachers of 1; column (4) assumes that all the increase will be of type 2; column (5) assumes that all the increase will be of type (3); and column (6) assumes that all the increase will be of type (4). Type 1 is the least qualified; 4 the most qualified. The impact of the different assumptions can be seen clearly in the following graph.

1/ See appendix 1 for a detailed forecasting model.

TABLE 11

TWENTY YEAR FORECASTS OF RATES OF GROWTH OF AVERAGE TEACHER SALARIES AND TOTAL TEACHER COSTS BY COUNTRY

COUNTRY		EQUILIBRIUM[1]		3% GROWTH SYSTEM[2]		3% GROWTH TCH 1[3]		3% GROWTH TCH 2[4]		3% GROWTH TCH 3[5]		3% GROWTH TCH 4[6]	
	YRS	1-10	11-20	1-10	11-20	1-10	11-20	1-10	11-20	1-10	11-20	1-10	11-20
BENIN	AVG SAL	3.30%	0.80%	2.40%	0.54%	2.15%	0.32%	2.26%	0.46%	3.12%	1.18%	::	::
	TOT COST	3.39%	0.80%	5.27%	3.25%	5.21%	3.02%	5.04%	3.58%	6.26%	3.89%	::	::
C.A.R.	AVG SAL	3.27%	1.78%	2.35%	1.17%	2.56%	0.41%	2.50%	1.34%	3.07%	1.71%	::	::
	TOT COST	3.27%	1.78%	5.23%	3.90%	4.81%	3.11%	5.57%	4.08%	6.16%	4.45%	::	::
GUINEA	AVG SAL	1.42%	-0.32%	0.56%	-0.20%	0.15%	-0.82%	1.00%	0.41%	::	::	::	::
	TOT COST	1.42%	-0.32%	3.57%	2.49%	3.15%	1.88%	4.03%	3.12%	::	::	::	::
COTE D'IVOIRE	AVG SAL	2.61%	0.84%	1.63%	0.56%	0.85%	-0.48%	1.37%	0.96%	::	::	::	::
	TOT COST	2.81%	0.92%	4.88%	3.25%	3.88%	2.21%	5.24%	3.68%	::	::	::	::
TOGO	AVG SAL	2.70%	-0.03%	1.52%	-0.15%	0.51%	-1.00%	1.41%	-0.36%	2.24%	0.82%	::	::
	TOT COST	2.70%	-0.03%	4.56%	2.52%	3.52%	1.05%	4.28%	2.32%	5.12%	3.82%	::	::
ETHIOPIA	AVG SAL	2.96%	1.80%	2.06%	1.23%	1.66%	0.83%	1.77%	1.05%	2.28%	1.37%	3.37%	1.70%
	TOT COST	2.96%	1.80%	5.13%	3.68%	4.50%	3.52%	4.83%	3.77%	5.35%	4.11%	5.65%	4.44%
KENYA	AVG SAL	1.66%	-1.03%	0.64%	-0.67%	::	::	0.29%	-1.09%	0.65%	-0.53%	2.06%	0.68%
	TOT COST	1.66%	-1.03%	3.66%	2.01%	::	::	3.29%	-1.87%	3.67%	2.15%	4.80%	3.59%
MAURITIUS	AVG SAL	0.47%	-1.83%	-0.43%	-1.29%	::	::	::	::	::	::	::	::
	TOT COST	0.47%	-1.83%	2.56%	1.27%	::	::	::	::	::	::	::	::
BURUNDI	AVG SAL	2.28%	-0.45%	1.26%	-0.27%	0.89%	-0.71%	1.22%	0.41%	::	::	::	::
	TOT COST	2.28%	-0.45%	4.30%	2.62%	3.93%	1.96%	4.25%	3.12%	::	::	::	::
DJIBOUTI	AVG SAL	1.48%	-0.48%	0.69%	-0.41%	0.36%	-0.98%	1.01%	0.04%	::	::	::	::
	TOT COST	1.48%	-0.48%	3.62%	2.28%	3.35%	1.79%	4.04%	2.73%	::	::	::	::
MADAGASCAR	AVG SAL	0.55%	-1.53%	-0.23%	-0.89%	-0.85%	-2.36%	-0.26%	-1.02%	0.89%	0.71%	::	::
	TOT COST	0.55%	-1.53%	2.76%	1.78%	2.02%	0.27%	2.73%	1.65%	3.82%	3.42%	::	::
RWANDA	AVG SAL	1.81%	0.54%	0.78%	0.22%	-0.08%	-0.68%	0.81%	0.36%	1.68%	1.15%	::	::
	TOT COST	1.81%	0.54%	3.80%	2.62%	2.92%	2.00%	3.94%	3.08%	4.73%	3.87%	::	::
ZAIRE	AVG SAL	1.10%	0.56%	0.32%	0.32%	0.24%	0.24%	0.48%	0.44%	::	::	::	::
	TOT COST	1.10%	0.56%	3.33%	3.02%	3.25%	2.62%	3.50%	3.15%	::	::	::	::
BURKINA-FASO	AVG SAL	1.99%	-0.73%	0.85%	-0.48%	0.84%	-0.34%	0.72%	-0.21%	::	::	::	::
	TOT COST	1.99%	-0.73%	3.87%	2.20%	3.90%	2.35%	3.72%	2.28%	::	::	::	::
GAMBIA	AVG SAL	0.36%	0.42%	-0.11%	0.26%	-0.23%	-0.04%	0.53%	0.87%	::	::	::	::
	TOT COST	0.36%	0.42%	2.68%	2.98%	1.79%	1.95%	3.55%	3.56%	::	::	::	::
MALI	AVG SAL	1.11%	-0.21%	0.56%	0.02%	0.53%	-0.34%	0.65%	0.99%	::	::	::	::
	TOT COST	1.11%	-0.21%	3.58%	2.71%	3.50%	2.30%	3.87%	2.78%	::	::	::	::
MAURITANIA	AVG SAL	1.08%	1.08%	1.28%	0.65%	0.44%	-0.21%	1.16%	0.38%	1.37%	0.76%	::	::
	TOT COST	1.08%	1.08%	4.32%	3.38%	3.45%	2.28%	4.28%	3.10%	4.71%	3.47%	::	::
NIGER	AVG SAL	2.84%	1.21%	1.82%	0.73%	1.17%	0.11%	1.80%	0.61%	2.38%	1.86%	::	::
	TOT COST	2.62%	1.21%	4.87%	3.28%	4.20%	2.81%	4.82%	3.32%	6.30%	4.81%	::	::
SENEGAL	AVG SAL	1.32%	0.09%	0.56%	0.03%	0.05%	-0.77%	0.27%	-0.40%	0.89%	0.35%	::	::
	TOT COST	1.32%	0.09%	3.58%	2.71%	3.05%	1.95%	3.28%	2.29%	3.82%	3.05%	::	::
ZAMBIA	AVG SAL	1.38%	-0.002%	0.76%	0.91%	::	::	0.96%	-0.40%	0.81%	0.17%	1.56%	0.76%
	TOT COST	1.38%	-0.002%	3.78%	3.71%	::	::	3.87%	2.28%	3.94%	2.87%	5.20%	3.46%
AVERAGE ANNUAL RATES OF GROWTH ACROSS COUNTRIES	AVG SAL	1.78%	0.87%	0.81%	0.96%	0.55%	-0.46%	1.04%	0.61%	1.70%	0.78%	2.29%	1.06%
	TOT COST	1.78%	0.87%	3.81%	2.72%	3.44%	2.13%	3.87%	2.91%	4.75%	3.49%	4.92%	3.76%

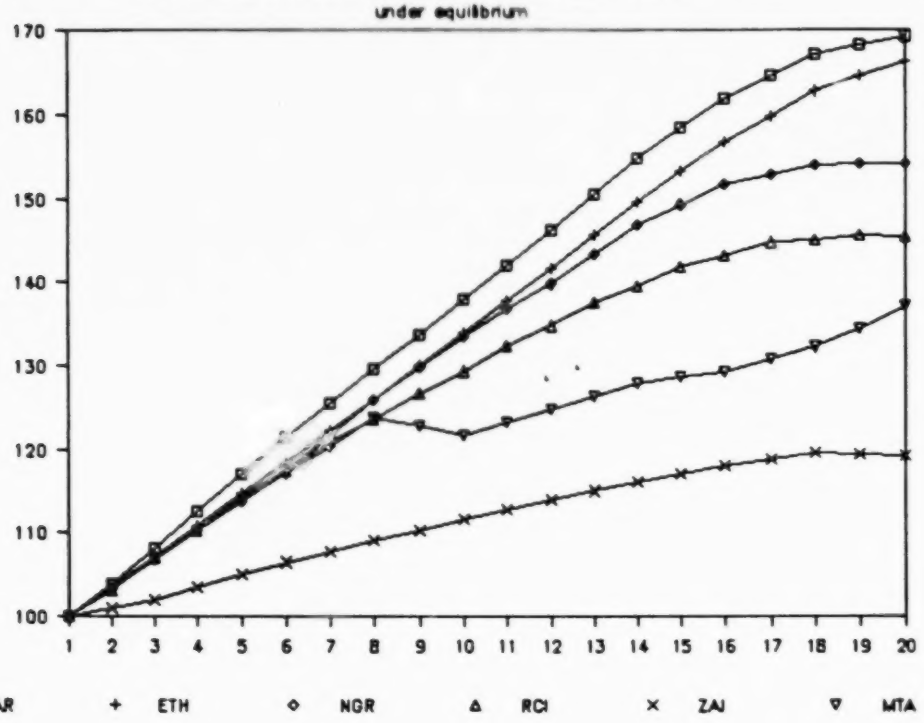


In this case (Burundi) average salaries under assumption of Columns (1) to (4) follow a bell shaped pattern. The difference between average salaries under assumptions of columns (3) and (4) is over 25%. In the group of SSA countries there are four basic patterns of "upward drift." These are presented in the following graphs based on figures of column (1) 2/

2/ It is interesting to note that in the majority of cases there is a change around the 10th year. The reason for this is that the bulk of the present teaching force is relatively young (see table 4). After ten years many in this group will reach the plateau of maximum salaries and stay there until retirement. As a result, with new teachers coming in at the lower salary step, the rate of growth of salaries will fall. Whereas during the first 10 years the majority continues to climb the salary ladder, only a smaller proportion will do so during the following ten years.

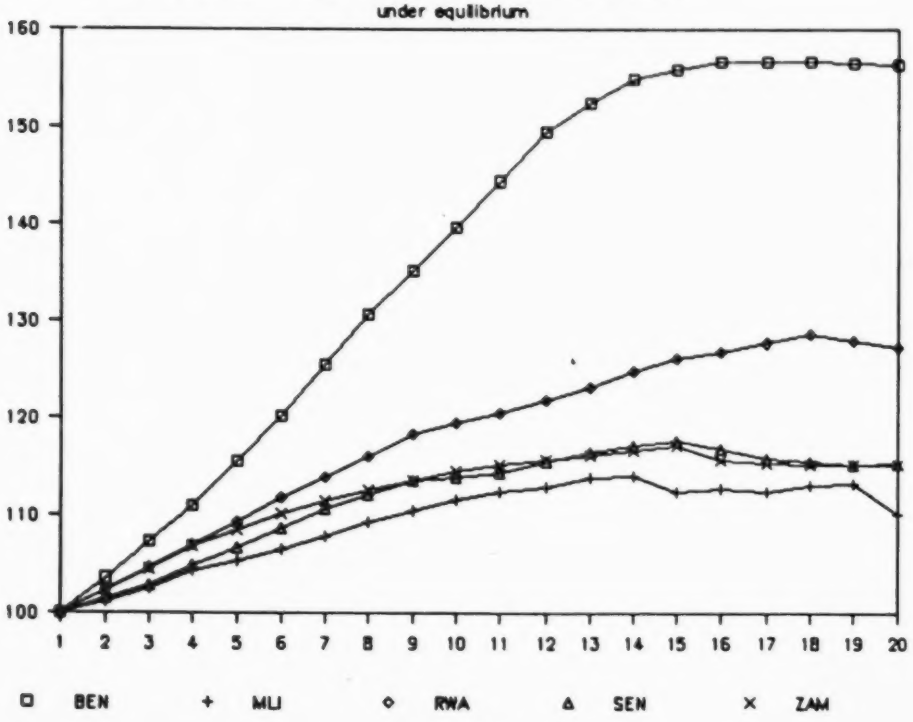
PROJECTED AVERAGE SALARIES –

under equilibrium



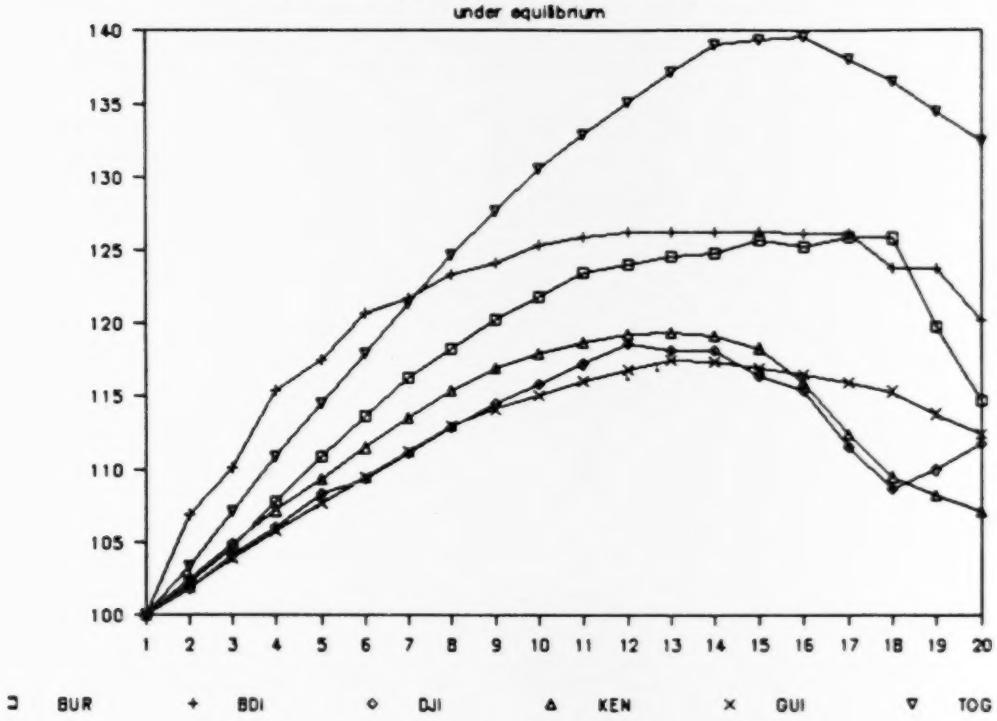
PROJECTED AVERAGE SALARIES –

under equilibrium



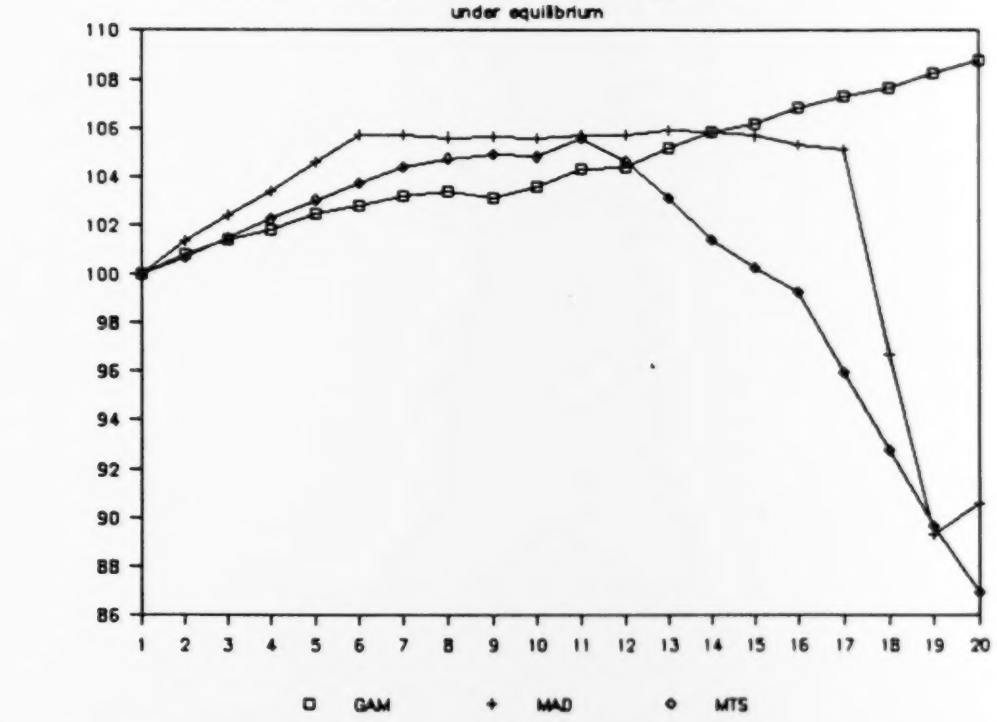
PROJECTED AVERAGE SALARIES –

under equilibrium



PROJECTED AVERAGE SALARIES –

under equilibrium



The first graph comprises countries where the "upward drift" is continuous; the second comprises countries where the increase in the first 10 years are substantial, and the increase in the last years smaller; the third includes countries where the increase of the two periods are small; the fourth includes countries where there is a substantial increase in the first period and very small or even negative growth in the second.

Conclusion

The forecasts of table 11 based on a growth rate of 3% of the teaching force-a mild assumption for most SSA countries-show that the next ten years will be critical to primary schooling. Total teaching costs will grow at an average of over 4%. This is way above the expected real growth rate of governments' operational budgets for most SSA countries. The first reaction to this problem could be as it was in the past, to try to reduce average salaries. A prevalent, though seldom explicit and mostly unintended, remedy for lowering average salaries is to allow salaries of teachers (and all other civil servants) to deteriorate with inflation.

If the share of teaching costs in the Governments' budget remains constant, and assuming constant tax rates

$$g = r + i = s = d + n + a \quad (1)$$

where

g = rate of growth of the nominal government budget

r = real rate of growth of taxable base

i = rate of inflation

s = rate of growth of nominal teaching budget

d = "upward drift" in average salaries

n = rate of growth of the teaching force

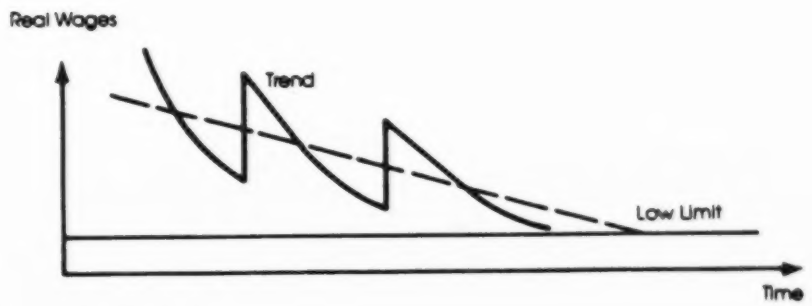
a = rate of adjustment to inflation

from (1)

$$n = r - d + (i-a) \quad (2)$$

If salary scale parameters cannot be changed (d is fixed) n depends on r and (i-a) which measures the deterioration of salaries resulting from inflation (see table 9). This formulation helps explain how governments in SSA are able to maintain or even increase the number of teachers' enrollments hence when the rate of economic growth falls below the rate of growth of the school age population.

However, this process cannot go on indefinitely. When the accumulated deterioration (i-a) reaches a level that triggers political tensions, the government can temporarily raise real salaries either by limiting n (the rate of groth of teachers) or by borrowing. (This last measure would contribute to inflationary pressures in the future.) This process when repeated many times ends up producing a long run falling trend in real wages.



When real wages reach the lowest acceptable limit in the standard of living, teachers will react by withholding efforts and by lowering attendance in school in order to raise their revenue per unit of effort and time, and perhaps increase their income by using the extra time for other endeavours. The result will certainly have dire consequences for the quality of teaching.

Maintenance, let alone increases, of enrollment rates in primary schooling at a satisfactory level of quality cannot rely on inflation as a long run solution. Only a combined effect of changing salary scale characteristics and the distribution by category of teachers of new entrants to the teaching force, improvement of teacher productivity and, especially, reallocation of budgets to favor primary schooling, can provide a feasible solution.

VI. Recommendations

SSA countries are trying to expand their primary school system to make their proposed goal of universal primary education a reality. This is an enormous and very expensive job at a time when budget constraints are putting a crimp on educational expenditures. The solution to this problem is: (1) to increase resources for primary education, (2) to improve the efficiency of the educational process, and (3) to lower costs of teaching inputs while conserving a desirable level of educational quality. This study provides information and analyses useful for dealing with (3). The following general recommendations for SSA which are derived from the review

presented in pp 21-46, suggests steps to facilitate planning of teacher salaries.

1 - In most countries salary scales of teachers are part and pracel of the civil service grading sysgtem. To have greater flexibility in determining teachers salary schedules it is better to delink teachers from other civil servants.

2 - Many SSA countries have significant proportions of unqualified and underqualified personnel in their teaching force. Any program to improve the quality of primary education in SSA must address this problem. But ways have to be found to mitigate the budgetary impact of upgrading these teachers.

3 - Institutional more than economic criteria is the norm for determining teachers salaries today. We should, therefore, strive to adjust salary scales to economic conditions. Maximums, minimums, and rates of progression in the salary scale should be used to attract and, then, retain qualified teachers, and, where possible, to minimize costs. This last objective could be achieved in conjunction with the other two because different combination of training and experience can produce the same teaching proficiency.

4 - It is in the nature of salary scales that decisions today concerning characteristics of the scale have differing effects over time. The evaluation of options, then, requires good forecasting of teachers salaries. This forecasting should be

based on the parameters of the salary scale, initial distribution of teachers on the scale, attrition rates, retirement age, rate of growth of the system, and policies concerning the distribution among categories of entering teachers. A good teacher cost forecast should also include a forecast of fringe benefits and social security contributions which can easily account for 25-30% of the salary bill. The number of recipients and amounts should be made explicit, something that is seldom done today.

5 - Decisions concerning the category mix of new entrants to the teaching force is usually predicated on the numbers of graduates from teacher training institutions who in most countries are guaranteed employment at graduation. To provide flexibility to the planning of teacher training the guaranteed employment clause should be abolished.

6 - The search for correct solutions to problems concerning teacher salaries requires detailed and reliable data on teachers: type, age, attrition rates, salary scales, fringe benefits, and distribution of teachers by steps of the salary scales. They are seldom available on a systematic basis, in spite of the fact that these data are required inputs for the preparation of a good budget proposal. The availability and low cost of present day computers makes the collection and analysis of these type of data an easy task. For the sake of good management, control and planning, the collection of this type of data on a permanent and

systematic basis should become a priority for all education ministries in SSA.

Other problems such as the adequacy of teacher salaries to attract and retain good teachers, and the desirability and feasibility of reducing teacher salaries in order to lower unit costs, must be analyzed and solved on a country by country basis. Simplistic observations such as "teachers salaries as percent of gnp/capita in SSA are too high compared with other regions and therefore have to be lowered", ignore not only economic and institutional factors involved in setting salaries, but also the possible adverse impact on teachers' productivity of lowering inordinately teacher salaries. Given that the relationship of salaries to the supply of teacher services in terms of quality and quantity varies from country to country, measures to affect and change this relationship must be tailored to local circumstances.

APPENDIX 1

Forecasting Approaches

There are two approaches to forecasting teachers' salaries. In the econometric method, wages can be determined from supply-demand equations using variables such as the number of secondary school graduates, income per capita, government budgets, age and sex of the teacher force, etc. In the eclectic approach, the present system is constructed and different conditions are simulated. In general, tghe eclectic approach is more effective in the medium and long run. It provides also flexibility for trying out different policies.

The eclectic model, presented here, simulates a system of teachers' salaries assuming a "unified" or "single" salary schedule where promotion is automatic with every two years of service.

The Forecasting Model

This is a detailed flow model that -- given initial conditions, transition rates from one step to the salary scale to the next, and attrition rates by age -- calculates over time the number of teachers by type and by step of the salary scale the salary bill and average salary by type of teacher.

The external variable driving the system is the number of new teachers entering the teaching force every year (ET). In general, ET is a function of the number of students in the education system and available teachers.

$$ET = \left(S \times \frac{CH}{CS \times TH}\right) - AT \quad (1)$$

$$AT = \sum_{j=1}^{n} T_{t-1} \left(1-A_j\right) \quad (2)$$

where

S = number of students
CH = class hours
CS = class size
TH = hours of teaching
AT = available teachers
t = time
Tj = number of teachers at step j
Aj = attrition rate at step j

If we wish to keep the number of teachers constant, and assuming that the number of students is also constant.

$$ET = \sum_{j=1}^{n} TjAj \quad (3)$$

Average salary (AW) is calculated by

$$AW = \sum_{j=1}^{n} TjWj \Big/ \sum_{j=1}^{n} Tj$$

where

Wj = salary of teacher at step j

and total salary bill (CT) by

$$CT = \sum_{j=1}^{n} TjWj$$

With this type of model, it is possible to simulate the effects on future teacher costs and average salaries of the structure of the salary scale, the initial distribution of the teaching force, the rates of

attrition, retirement age, and the speed at which the educational system expands.

The following examples will show the impact of each of these variables on average and total cost of teachers.

Data on teachers salaries and attrition rates are similar to those of a West African country. The computer model is written in Lotus 1-2-3.

Initial Age Distribution of the Teaching Force

Assuming that the number of teachers remains constant, retirement is after 30 years of work, and attrition rate zero, a 20 year simulation I shows 3 cases: "even distribution,: "young population", and "old population".

As time advances, average and total cost of teaching increase for th "young" population, and decreases for the "old" one (Graph 1).

Expansion of the System. The effect of an expanding system can be seen in Graph 2. In a growing system, the average salary tends to drop. The drop being a function of the rate of growth of the number of teachers, and the rate of progression of the salary scale.

Attrition Rates. The introduction of attrition rates has the same effect as increasing the entrants to the teaching force. Figure 3 compares an evernly distributed teaching force with and without attrition rates.

These simple examples show that because parameters in the model can vary widely, it is impossible to predict a-priori future average salaries of teachers. However, availability of computer models provide an efficient way for forecasting teacher salaries under a variety of assumptions.

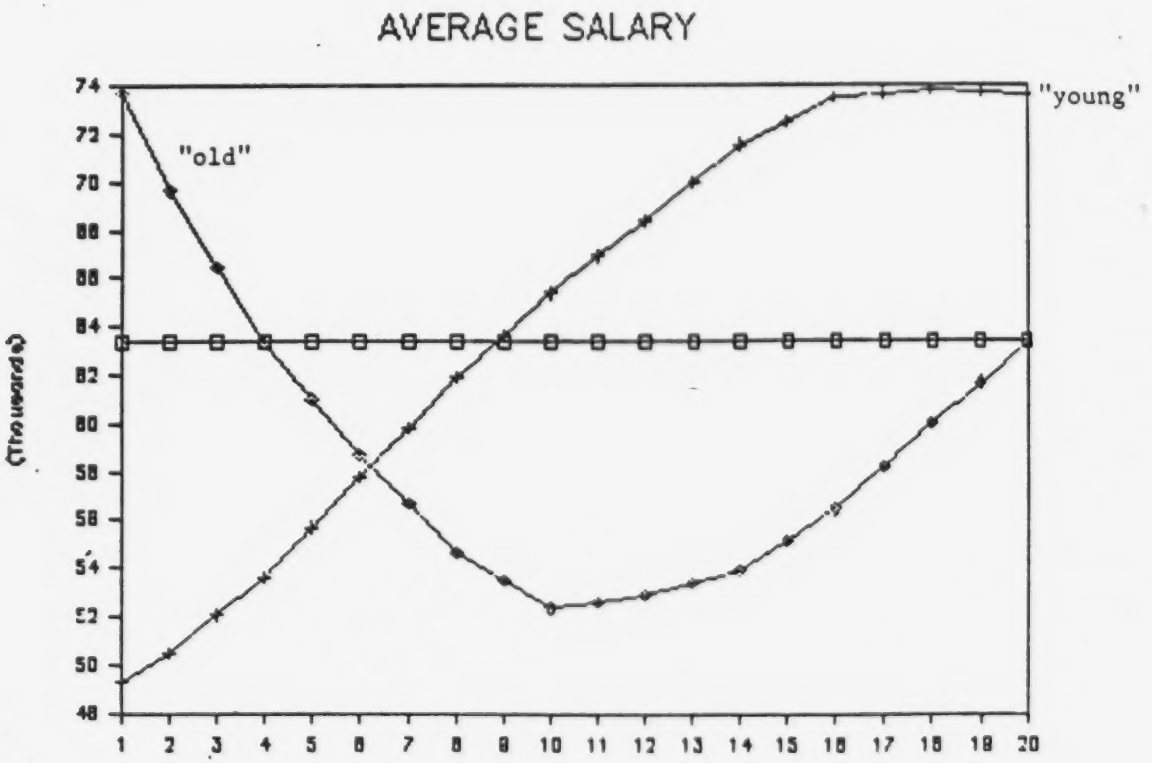


Figure 1

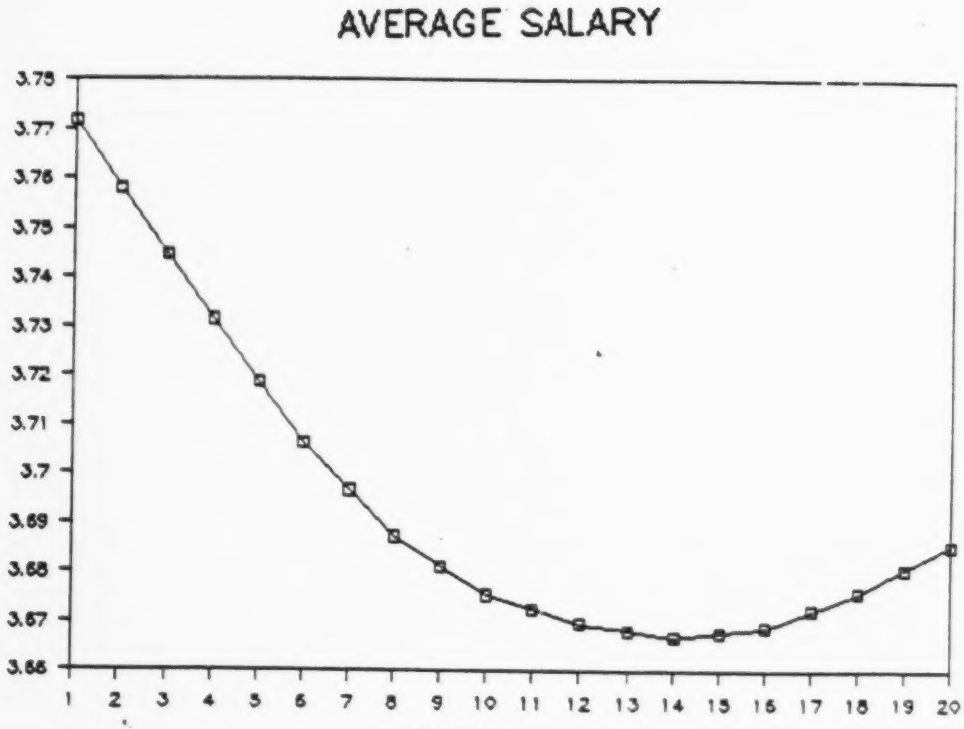


Figure 2

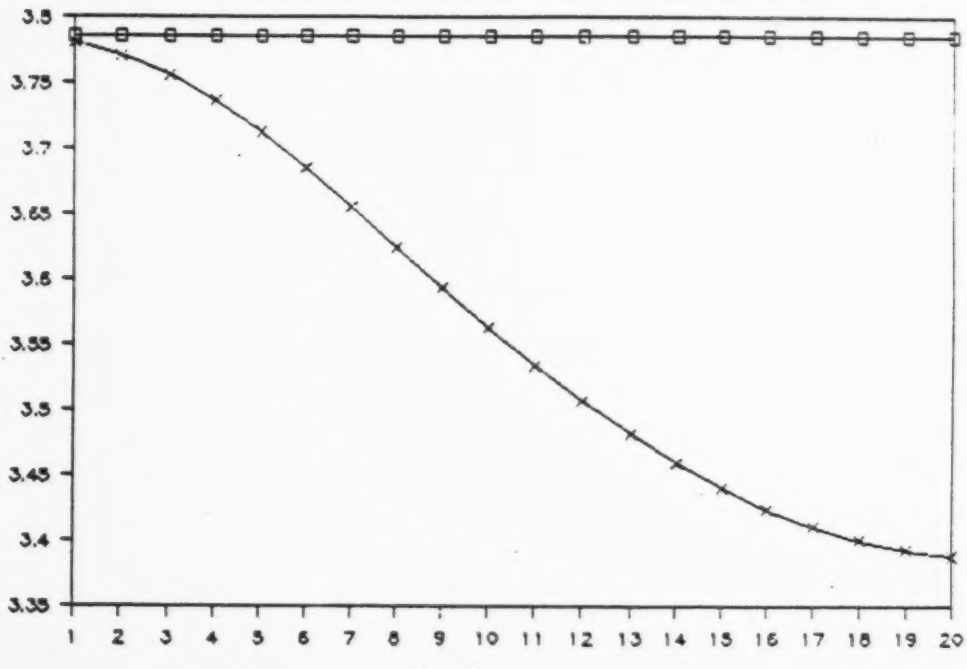


Figure 3

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